

BOARD OF INTERMEDIATE EDUCATION. A.P.

Vocational Bridge Course Practical Syllabus

PHYSICAL SCIENCES PRACTICAL & BIOLOGICAL SCIENCES PRACTICAL

PHYSICAL SCIENCE PRACTICALS

BOARD OF INTERMEDIATE EDUCATION-ANDHRA PRADESH, VIJAYAWADA

Vocational Bridge Course -Physical Science Practicals

PHYSICS LAB

I Year Physics practicals (w.e.f. 2018-19)

- 1. Vernier Calipers:** Find the volume of a given sphere/ cylinder using vernier calipers.
- 2. Screw Gauge:** Determine the thickness of a given glass plate using screw gauge.
- 3. Physical Balance :** Find the correct mass of the given body
- 4. Simple Pendulum:** Find the acceleration due to gravity at your place.
- 5. Concurrent forces:** Verify the parallelogram/triangle law of forces and find the weight of a given stone in air (Take 2 observations in each case)
- 6. Force constant of a spring:** Find the force constant of a given helical spring by the method of oscillation using different suspension weights. (Take 3 observations in each case)
- 7. Boyle's Law:** Plot $h-1/l$ graph using Boyle's law apparatus (or) quill tube apparatus. Find atmospheric pressure from the graph.
- 8. Specific Heat of a Solid:** Find the specific heat of the given solid by using principle of method of mixtures. (Mass need not be calculated to correct upto milligram).

II Year Physics practicals (w.e.f 2019-20)

- 1. Velocity of Sound:** Determine the velocity of sound in air at room temperature using resonance apparatus. (Use two tuning forks of different frequencies)
- 2. Determination of Focal Length of a Concave Mirror:** Determination the focal length of a given concave mirror by u-v method.
- 3. Determination of Focal Length of a Convex Lens:** Determine the focal length of a given convex lens by u-v method.
- 4. Prism :** Find the refractive index of the given prism material (angle of Prism is 60°)
- 5. Mapping of Magnetic field lines – Locating neutral points:** Draw the magnetic field lines in the combined magnetic field due to the earth and the bar magnet placed in the magnetic meridian with its North pole pointing towards geographical North. Locate Null points and calculate the Magnetic Moment of the given magnet. (Horizontal component of earth's Magnetic field = 0.38×10^{-4} Tesla)
- 6. Ohm's Law – Verification:** Verify Ohm's Law using R-Cot θ graph method. (Take 6 observations)
- 7. Meter Bridge – Determination of Specific Resistance:** Find the specific resistance of a given wire using meter Bridge.
- 8. Junction Diode – Characteristics:** Draw Current – Voltage (I-V) characteristics of a junction diode (Take at least 6 observations)

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Vocational Bridge Course -Physical Science Practicals

Physics Practical Exam Scheme of Valuation with Effect from March - 2019

Time : 1hr30mins	Maximum Marks:25 marks
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1). Formula and procedure (2+3=5)	5 marks
2). Tabular form, observation and graph (2+3+1=6)	6marks
3). Calculation and Result (4+2=6)	6marks
4). Precautions	2marks
5). Viva-voce	2marks
6). Record	4marks
Total	25marks
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Vocational Bridge Course -Physical Science Practicals
CHEMISTRY LAB (w.e.f. 2018-2019)

Question Bank for Qualitative Analysis

S.No. Salt Name

1. Aluminum Nitrate , $Al(NO_3)_3$
2. Ammonium carbonate, $(NH_4)_2CO_3$
3. Barium Bromide, $BaBr_2$
4. Calcium chloride, $CaCl_2$
5. Copper sulphate, $CuSO_4$
6. Ferrous sulphate, $FeSO_4$
7. Lead Nitrate, $Pb(NO_3)_2$
8. Magnesium Chloride, $MgCl_2$
9. Magnesium Chloride, $MnCl_2$
10. Zinc sulphate., $ZnSO_4$.

I. Qualitative analysis.

10 Marks

Q: Identify of anion and cation in the given salt by systematic procedure and report name of salt.

Question Bank for Titrimetric Analysis (Volumetric Analysis)

SECTION – A

1. Estimate the amount of Hydrochloric acid present in 1000 ml of the given solution. Sodium Carbonate solution is supplied.
2. Estimate the amount of Sodium Carbonate present in 500 ml of the given solution. 0.1M Hydrochloric acid solution is supplied.

SECTION – B

3. Estimate the amount of Oxalic acid present in 250 ml of the given solution. 0.2M Sodium Hydroxide Acid solution is specified.
4. Estimate the amount of Sodium Hydroxide present in 100 ml of the given solution. 0.1M Oxalic acid Solution is supplied.

SECTION – C

5. Estimate the amount of Oxalic acid present in 1000 ml of the given solution. 0.02M Potassium Permanganate solution is supplied.
6. Estimate the amount of Potassium Permanganate present in 500 ml of the given solution. 0.05M Oxalic acid solution is supplied.

SECTION – D

7. Estimate the amount of Ferrous Ammonium Sulphate present in 250 ml of the given solution. 0.02M Potassium Permanganate solution is supplied.
8. Estimate the amount of Potassium Permanganate present in 100 ml of the given solution. 0.1 M Ferrous Ammonium Sulphate solution is supplied.

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Vocational Bridge Course -Physical Science Practicals

CHEMISTRY LAB (w.e.f. 2018-2019)

Model Question Paper with Scheme of Valuation with effect from IPE March – 2019

Time: 1½Hours

Max.Marks:25

I. Qualitative Analysis **10Marks**

1. Physical state, colour and Actionsofheat ($\frac{1}{2} + \frac{1}{2} + 1 = 2$ Marks)
2. IdentificationofAnion 2Marks
3. Confirmation testforAnion 2Marks
4. Identification test of cation 2Marks
5. Confirmation test for cation 1Mark
6. Report 1Mark

II. Titrimetric Analysis(VolumetricAnalysis) **10Marks**

- Procedure in the first 10 mts with equation 2 + 1 = 3
- Marks Titration and Tabulationwithvalues 4Marks
- For indicatingtheformula 1Mark
- For calculation and Report 2 Marks

III. Record+Viva **5 Marks (3+2)**

Total: **25Marks**

BIOLOGICAL SCIENCE PRACTICALS

BOARD OF INTERMEDIATE EDUCATION-ANDHRA PRADESH, VIJAYAWADA
Vocational Bridge Course –Biological Science Practicals

BOTANY LAB - (w.e.f. 2018-2019)

WEIGHTAGE OF MARKS

S.No	Chapter	Number of Periods	Weightage of Marks
1	Anatomy	04	05
2	Taxonomy	02	04
3	Experiments (Physiology, Ecology)	06	06
4	Spotter/Slides	06	05
5	Record and Herbarium	02	3+2=05
	Total	20	25

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Vocational Bridge Course –Biological Science Practicals

BOTANY LAB – (w.e.f.2018-2019)

MODEL QUESTION PAPER With effect from IPE March - 2018

Time: 3Hours

Max. Marks: 25

- =====
1. Take the T.S. of the given material 'A' and prepare a slide. Identify the Material with suitable reasons. Draw a neat labeled diagram 5Marks
 2. Describe the identifying features of plant material 'B' and identify it upto family level, by giving reasons. Draw L.S. of flower, Floral diagram and write floral formula. 4Marks
 3. Conduct the given experiment 'C'. Comment on the results and their significance. 5Marks
 4. Identify the Spotters /Slides D,E and F (2x3) 6Marks
 5. Record (3 marks) and Herbarium(2marks) 5Marks

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Vocational Bridge Course –Biological Science Practicals

BOTANY LAB

SYLLABUS – (w.e.f.2018-2019)

QUESTION BANK

Section - A

Anatomy: Section cutting of the following plant material and preparation of slide.

1. Monocot Root eg. Crinum
2. Dicot Root (Primary) e.g. Cicer/Trigonella Seedling
3. Monocot Stem e.g. Grass
4. Dicot Stem (Primary) e.g. Tridax

Section – B

Taxonomy: Description of the family. Vegetative and Floral Characters that is necessary for Identification of the Family Fabaceae, Solanaceae, and Liliaceae.

Section - C

Physiology Experiments:

1. Determination of transpiration by Cobalt Chloride method.
2. Study of Plasmolysis (by Rheodiscolor peels or by grapes)
3. Determination of Osmotic Potential (by Potato Osmometer)
4. Separation of Chlorophyll Pigments (by Paper Chromatography)

Section – D

Spotters/Slides Identification: (One Spotter from each section)

- | | |
|---------------------------------|---------------------------------------|
| 1. Tuberos Root – eg. Carrot | 8. Offsets – eg. Eichhornia |
| 2. Epiphytic roots – eg. Vanda. | 9. Insectivorous leaf – eg. Nepenthes |
| 3. Phylloclade – eg. Opuntia | 10. Hypanthodium – eg. Ficus |
| 4. Phyllode – eg. Acacia | 11. Spadix – eg. Colocasia |
| 5. Rhizome – eg. Zinger | 12. Drupe – eg. Mango |
| 6. Corm – eg. Colocasia | 13. Hesperidium – citrus |
| 7. Bulb – eg. Onion | |

Section – E

- | | |
|-----------------------------------|--------------------------|
| 14. Nostoc – Vegetative filament | 16. Rhizopus – mycelium |
| 15. Spirogyra Vegetative filament | 17. Agaricus Basidiocarp |

Section – F

- | | |
|-----------------------------------|--------------------------|
| 18. Funaria plant with saprophyte | 22. Cycas megasporophyll |
| 19. Marchantia Thallus | 23. Pisum plant (pea) |
| 20. Selaginella – Plant | 24. Zea (corn) plant |
| 21. Cycas – microsporophyll | |

Section – G

Herbarium: 10 Sheets should be prepared by the student out of which two will be of economic importance; two will be of Ecological importance and the remaining six will be of the families included in the syllabus.

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ZOOLOGY LAB

SYLLABUS (w.e.f. 2018-2019)

I. Identification of displayed chart 1 + 2 + 2 = 5 Marks

- (a) Human being - Digestive System
- (b) Human being - Male Reproductive System
- (c) Human being - Female Reproductive System
- (d) Human - Eye
- (e) Human - Ear

II. Physiology 1 + 3 + 1 = 5 Marks

1. Identification of Sugar, Albumin and Starch in given sample.

III. Spotting: Specimens + slides –Marks 1 + 1 = 2 ($\frac{1}{2} + 1 + \frac{1}{2} = 2$)

1. Spong 2 x 5 = 10 Marks

2. Jelly fish

3. Tape worm

4. Ascais –Male & Female

5. Earth worm

6. Leech

7. Scorpion, palaemon, crab, spider, butterfly

8. Pila

9. Star fish

10. T.S. of Liver, T.S. of starch, T.S. of Intestine, T.S. of Pancreas, T.S. ovary.

(a) Simple Squamous epithelium

(b) Columnar epithelium

(c) T.S of blood smear

(d) T.S. of bone.

11. Osteology:-Joints :-Pivot Joint, Ball & socket joint, Hinge joint, gliding joint.

12. Record -5 Marks

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ZOOLOGY LAB

Model Question Paper with scheme of evaluation (w.e.f. 2018-2019)

Time: 2 Hours

Max. Marks: 25

Q:I

Identification of displayed Chart /Model.

Draw a neat labelled diagram of the same?(5)

1 + 2 + 2 = 5 Marks

(1) Identification of Chart/Model (1)

1-Mark

(2) Drawing the Chart/Model (2)

2-Marks

(3) Labelling minimum (4)

2-Marks

Q:II

Identify the presence of sugar in the given A, B, C, D samples. Write the principle procedure and the inference.(5)

1 + 3 + 1 = 5 Marks

(1) Principle -1

(2) Procedure-3

(3) Result -1

Total -5

Q:III

Identify the given a, b, c, d, e spottes. Draw, label and write the characters.

2 x 5 = 10 Marks

(1) Identification -½ Mark

(2) Diagram + Label -½ Mark

(3) Characters (5) -1 Mark

Total -2 Marks

Q:IV Record Book.

5 Marks